What is claimed is:

1. An apparatus for monitoring integrity of a wire, comprising:

a pulse generator for generating a pulse waveform for transmission through the wire;

a function generator for generating a forcing waveform for transmission through the wire, wherein the pulse waveform is transmitted through the wire in combination with the forcing waveforms; and

a detector adapted to measure the change in dissipation factor values along the wire.

2. An apparatus according to Claim 1, further comprising a coupling circuit arranged between the pulse generator and the wire.

3. An apparatus according to Claim 2, wherein the coupling circuit comprises a high pass filter to isolate the pulse generator from the forcing waveform.

4. An apparatus according to Claim 1, wherein the forcing waveform is at a predetermined frequency in accordance with a type of wire insulation material and/or a type of wire conductor material.

5. An apparatus according to Claim 1, further comprising a digital multimeter for measuring a voltage induced in the wire.

6. An apparatus according to Claim 1, further comprising an impedance meter for measuring the dissipation factor values of the wire.

7. An apparatus according to Claim 1, wherein the function generator sweeps the forcing waveform between a frequency range of ω_{min} and ω_{max}, where ω_{peak} is greater than ω_{min} and less than ω_{max}.

8. A method for monitoring integrity of a wire, comprising the steps of:

generating a pulse waveform for transmission through the wire;

generating a forcing waveform for transmission through the wire;

transmitting the pulse waveform through the wire in combination with the forcing waveform; and

measuring a change in dissipation factor values along the wire.

9. A method according to Claim 8, wherein the forcing waveform is at a predetermined frequency in accordance with a wire insulation material and/or a wire conductor material.

10. A method according to Claim 8, further comprising a step of measuring a reflected waveform from the transmitted pulse waveform.

11. A method according to Claim 8, further comprising a step of isolating the pulse waveform from the forcing waveform.

12. A method according to Claim 8, further comprising a step of sweeping the forcing waveform between a frequency range of ω_{min} and ω_{max}, where ω_{peak} is greater than ω_{min} and less than ω_{max}.

13. An apparatus for monitoring integrity of a wire, comprising:

a pulse generator for generating a pulse waveform for transmission through the wire;

a generator for generating a non-electrical forcing function for stimulating the wire, wherein the pulse waveform is transmitted through the wire in combination with the non-electrical forcing function; and

a detector adapted to measure the change in dissipation factor values along the wire.

14. An apparatus according to Claim 13, further comprising a coupling circuit arranged between the pulse generator and the wire.

15. An apparatus according to Claim 14, wherein the coupling circuit comprises a high pass filter to isolate the pulse generator from the forcing waveform.

16. An apparatus according to Claim 13, wherein the generator is a heat generator and wherein the non-electrical forcing function is a thermal forcing function.

17. An apparatus according to Claim 16, wherein the thermal forcing function is at a predetermined temperature accordance with a type of wire insulation material and/or a type of wire conductor material.

18. An apparatus according to Claim 16, wherein the heat generator sweeps the thermal forcing function between a temperature range of T_{min} and T_{max}, where T_{peak} is greater than T_{min} and less than T_{max}.

19. An apparatus according to Claim 13, wherein the generator is a vibration generator and wherein the non-electrical forcing function is a mechanical forcing function.

20. An apparatus according to Claim 19, wherein the mechanical forcing function is at a predetermined vibration in accordance with a type of wire insulation material and/or a type of wire conductor material.

21. An apparatus according to Claim 19, wherein the vibration generator sweeps the mechanical forcing function between a frequency range of ω_{min} and ω_{max}, where ω_{peak} is greater than ω_{min} and less than ω_{max}.

22. An apparatus according to Claim 13, further comprising a digital multimeter for measuring a voltage induced in the wire.

23. An apparatus according to Claim 13, further comprising an impedance meter for measuring the dissipation factor values of the wire.

24. A method for monitoring integrity of a wire, comprising the steps of:

generating a pulse waveform for transmission through the wire;

generating a non-electrical forcing waveform for stimulating the wire;

transmitting the pulse waveform through the wire in combination with the non-electrical forcing waveform; and

measuring a change in dissipation factor values along the wire.

25. A method according to Claim 24, wherein the non-electrical forcing function is a thermal forcing function.

26. A method according to Claim 25, wherein the thermal forcing function is at a predetermined temperature in accordance with a type of wire insulation material and/or a type of wire conductor material.

27. A method according to Claim 25, further comprising a step of sweeping the thermal forcing function between a temperature range of T_{min} and T_{max}, where T_{peak} is greater than T_{min} and less than T_{max}.

28. A method according to Claim 24, wherein the non-electrical forcing function is a mechanical forcing function.

29. A method according to Claim 28, wherein the mechanical forcing function is at a predetermined vibration frequency in accordance with a type of wire insulation material and/or a type of wire conductor material.

30. A method according to Claim 28, further comprising a step of sweeping the mechanical forcing function between a frequency range of ω_{min} and ω_{max}, where ω_{peak} is greater than ω_{min} and less than ω_{max}.

31. A method according to Claim 24, further comprising the step of measuring a voltage induced in the wire.

32. A method according to Claim 24, further comprising a step of isolating the pulse waveform from the non-electrical forcing waveform.